

IN THE CLAIMS:

- 1 1. (Cancelled).
- 1 2. (Cancelled).
- 1 3. (Previously Presented) The system of claim 27 further comprising storage media
2 configured to store information as units of storage resources, the units of storage
3 resources allocated among each of the virtual servers.
- 1 4. (Original) The system of claim 3 wherein the units of storage resources comprise
2 volumes.
- 1 5. (Original) The system of claim 3 wherein the units of storage resources comprise
2 qtrees.
- 1 6. (Previously Presented) The system of claim 3 wherein the file system is
2 configured to perform a boundary check to verify that a request is allowed to access
3 certain units of the storage resources on the storage media, each virtual server further
4 configured to create virtual disks within the units of storage resources and wherein each
5 of the virtual disks is associated with one or more of the virtual servers.
- 1 7. (Previously Presented) The system of claim 6 wherein the storage operating
2 system further comprises a user interface having a command set configured to operate on
3 virtual disks, and wherein the command set executes within a context of a virtual server.
- 1 8. (Previously Presented) The system of claim 7 wherein the user interfaces
2 comprises a command line interface (CLI) configured to support the command set.

- 1 9. (Previously Presented) The system of claim 8 wherein the CLI comprises a lun
2 command configured to perform operations to a virtual disk associated with the context
3 of the virtual server.
- 1 10. (Previously Presented) The system of claim 9 wherein the lun command creates a
2 logical unit number on the file system, the logical unit number being associated with the
3 context of the virtual server.
- 1 11. (Original) The system of claim 8 wherein the CLI comprises an igroup command
2 that generates a set of file system primitive for binding an initiator group to one or more
3 initiator addresses and wherein the initiator group is associated with the context of the
4 virtual server.
- 1 12. (Previously Presented) The system of claim 27 wherein the block-based protocol
2 comprises iSCSI.
- 1 13. (Previously Presented) The system of claim 27 wherein the block-based protocol
2 comprises FCP.
- 1 14. (Cancelled).
- 1 15. (Previously Presented) The system of claim 27 wherein the system is further
2 configured to process data access requests in response to one or more file-level protocols.
- 1 16. (Cancelled).
- 1 17. (Previously Presented) The method of claim 28 further comprising configuring
2 storage media to store information as units of storage resources, the units of storage
3 resources allocated among each of the virtual servers.

1 18. (Original) The method of claim 17 wherein the units of storage resources
2 comprise volumes.

1 19. (Original) The method of claim 17 wherein the units of storage resources
2 comprises qtrees.

1 20. – 26. (Cancelled).

1 27. (Previously Presented) A system comprising:
2 a processor;
3 a memory coupled to the processor;
4 a storage operating system resident in the memory and executed by the processor,
5 the storage operating system implementing a file system configured to provide storage
6 service of information stored on the system;
7 a plurality of network interfaces configured to process received block-based
8 protocol data access requests, each network interface assigned to one or more network
9 addresses, each network interface further assigned an identifier that binds the network
10 interface to an address space that includes the one or more network addresses; and
11 a plurality of context data structures stored in the memory and containing
12 configuration information to establish a plurality of instances of virtual servers executed
13 by the processor, each virtual server allocated resources that include a partitioning of the
14 network interfaces and assigned network addresses to establish a distinct security domain
15 for that virtual server that enables controlled access to the allocated network interfaces
16 and assigned network addresses, each virtual server further configured to share access to
17 the file system to service the block-based protocol data access requests by converting the
18 block-based protocol data access requests to appropriate file system data requests when
19 providing the storage service of the information stored on the system.

1 28. (Previously Presented) A method comprising:

executing, by a processor, a storage operating system resident in a memory, the storage operating system implementing a file system configured to provide storage service of information stored on a storage system.

processing, by a plurality of network interfaces, received block-based protocol data access requests;

assigning each network interface to one or more network addresses;

assigning each network interface an identifier that binds that network interface to an address space that includes the one or more network addresses;

storing a plurality of context data structures in memory, where each context data structure contains configuration information to establish a plurality of instances of virtual servers executed by the processor;

allocating resources that include a partitioning of the network interfaces and assigned network addresses to each virtual server to establish a distinct security domain for that virtual server that enables controlled access to the allocated network interfaces and assigned network addresses; and

sharing, amongst the virtual servers, access to the file system to service the block-based protocol data access requests by converting the block-based protocol data access requests to appropriate file system data requests when providing the storage service of the information stored on the storage system.

29. (Previously Presented) A computer readable medium containing executable program instructions executed by a processor, comprising:

program instructions that execute a storage operating system resident in a memory, the storage operating system implementing a file system configured to provide storage service of information stored on a storage system.

program instructions that process block-based protocol data access requests received at a plurality of network interfaces;

program instructions that assign each network interface to one or more network addresses;

10 program instructions that assign each network interface an identifier that binds
11 that network interface to an address space that includes the one or more network
12 addresses;

13 program instructions that store a plurality of context data structures in memory,
14 where each context data structure contains configuration information to establish a
15 plurality of instances of virtual servers executed by the processor;

16 program instructions that allocate resources that include a partitioning of the
17 network interfaces and assigned network addresses to each virtual server to establish a
18 distinct security domain for that virtual server that enables controlled access to the
19 allocated network interfaces and assigned network addresses; and

20 program instructions that share, amongst the virtual servers, access to the file
21 system to service the block-based protocol data access requests by converting the block-
22 based protocol data access requests to appropriate file system data requests when
23 providing the storage service of the information stored on the storage system.